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ABSTRACT

Low and average school achievers in grades 1 and 2 and grades 4 and 5 made attributions for successes and failures on school related and unrelated tasks. Students in the low achievement group were participants of the Title I program, and tested a year below their age-mates on reading and math achievement. Students were given two booklets of four drawings; each drawing depicted an elementary school aged child of the student's own sex completing a task. The drawings varied from one another as a function of Outcome (success vs. failure) and Task, i.e. (School - solving a problem the teacher assigned, Nonschool Neutral - completing a puzzle, Nonschool Feminine stereotyped - baking a cake, Nonschool Masculine stereotyped - building a go-cart). Below each drawing was a brief written description of the situation and outcome followed by four explanations for the outcome which referred to: (a) task difficulty, (b) effort, (c) luck, and (d) skill (in that order). Children were told to imagine that each drawing was really a picture of themselves and were asked to select the explanation which best suited their performance as depicted in that specific situation. Responses were relatively similar across age. Low achievers were more likely to explain performance by 'skill' (internal, stable) compared to average achievers, who more often used 'effort' (internal, unstable). Meanwhile, school performance was most often explained by 'effort' and least often explained by 'skill', especially among older children. Findings are discussed in terms of low vs. average achievers' perceptions of personal responsibility and/or capability for affecting future performance outcomes. (Author/SS)

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# Explanations for Success and Failure by Low and Average School Achievers[1]

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Abstract

Low and average school achievers in 1st-2nd and 4th-5th grades made attributions for successes and failures on school related and unrelated tasks to: (a) task difficulty, (b) effort, (c) luck, or (d) skill. Responses were relatively similar across age. Low achievers were more likely to explain performance by 'skill' (internal, stable) compared to average achievers, who more often used 'effort' (internal, unstable). Meanwhile, school performance was most often explained by 'effort' and least often explained by 'skill' especially among older children. Findings are discussed in terms of low vs. average achievers' perceptions of personal responsibility and/or capability for effecting future performance outcomes. The development and implications of these attributional patterns are considered in terms of educational practices.

Explanations for Success and Failure by Low and Average School Achievers

Recently, national attention has focused on a call to return to the "three R's" of education. Nevertheless, educators continue to recognize the need to enhance children's general processes of thinking, sense of competence and mastery, and drive toward achievement. Despite the recent public concerns, these latter goals are typically the most difficult to accomplish. With this in mind, researchers have turned to attributional models in order to understand expectancies (e.g., Parsons & Ruble, 1977), evaluative judgments (e.g., Salili, Maehr & Gillmore, 1976; Weiner & Peter, 1973) and explanations (e.g., Ames, Ames, & Felker, 1976; Bar-Tal & Darom, 1979) of achievement-related behaviors.

Of obvious relevance, is the work of Weiner, Frieze, Kukla, Reed, Rest & Rosenbaum (1971) who demonstrated that causal attributions for performance appear to vary along two dimensions: stability and locus of control. Expected outcomes tend to be attributed to stable factors such as ability (internal) or task difficulty (external) while unexpected outcomes are explained by unstable factors such as effort (internal) or luck (external) (e.g., Feather & Simon, 1971; Frieze & Weiner, 1971; Weiner et al., 1971).

Recent attempts to delineate the development of achievement-related attributional patterns have raised questions about the young child's cognitive capacity to consider effort (intent) and its reciprocal relationship to ability. In support of a cognitive-developmental perspective, Weiner and Peter (1973) found that 4-6 year olds deemphasized effort (intent) relative to outcome in making evaluative judgments of achievement. Intent became an increasingly important determinant with age, although its ultimate emphasis during adulthood appeared to be a function of cultural factors (Salili et al., 1976; Weiner & Peter, 1973). However, Parsons, Ruble, Klossom, Feldman, & Rhodes (1976) revealed that even kindergarteners use intent to evaluate

performance, but that its emphasis depends upon the presence of a complex of contextual cues. Furthermore, Karabenick and Heller (1976) reported that as early as first grade, there is an awareness of the reciprocal nature of effort and ability. However, the inference of effort from ability and outcome seems to developmentally precede the inference of ability from effort and outcome.

In addition to developmental patterns in attributional processes, distinct individual and/or group differences have been found. Weiner et al. (1971) summarized research which demonstrated that individuals high in resultant achievement motivation attributed their successes to internal factors and their failures to lack of effort. Persons low in resultant achievement motivation explained their successes by external factors and their failures by lack of ability. The literature in sex differences has also confirmed that low initial expectancies lead to external and/or unstable attributions for success and to internal and/or stable explanations for failures; high initial expectancies lead to the converse (e.g., Dweck, 1975; Dweck & Repucci, 1973; Feather & Simon, 1971; Parsons, Ruble, Hodges & Small, 1976). Most strikingly, these differential patterns have been found as early as 1st-3rd grade (e.g., Bond, 1979; Etaugh & Ropp, 1976) with females' performance typically explained according to the low initial expectancy pattern and males' performance according to the high initial expectancy pattern.

Alternatively, it has been argued that informational determinants may outweigh dispositional determinants of children's causal attributions (Ames et al., 1976). Clearly, sex differentiated attributional patterns for achievement-related performance are very much a function of the sex of the actor (rather than attributor) and the sex-typing of the specific task involved (e.g., Bond, 1979; Etaugh & Brown, 1975).

In sum, the research points to the early establishment of relatively stable differential patterns for explaining the causes of successes and failures. Both dispositional and informational determinants play a role in this distinctly cyclical

process in which self concepts and stereotypes are allowed to persist despite otherwise apparently discrepant information. Not only do expectations determine causal attributions but these attributions shape future expectations and hence, future performance.

This cyclical relationship between expectations, performance and explanations is an issue of central importance to our educational environment. From a very early age children are receiving feedback of all kinds, first from their families and then from their schools. The way in which they interpret and incorporate this information is presumably important in shaping their future expectations, causal explanations and performance. The impact of teacher expectancy on pupil performance has been demonstrated clearly (e.g., Rosenthal & Jacobson, 1966) and is beginning to be considered in light of Weiner et al.'s (1971) attributional model (e.g., Dweck, Davidson, Nelson, & Enna, 1978; Dweck, 1975; Cooper & Baron, 1977, 1979; Meyer, 1979). However, with few exceptions (e.g., Bar-Tal & Darom, 1979), children's own attributional patterns and their relationship to performance on achievement-related behaviors has rarely been considered from an attributional perspective.

While a variety of research has looked at some aspect of the relationship between achievement and self-perception of ability (e.g., Gordon, 1977; Jones & Grienecks, 1970; Jones & Strowig, 1968), many efforts have focused more specifically on issues related to locus of control and intellectual achievement (e.g., Butterfield, 1964; Coleman, Campbell, Hobson, McPortland, & Mood, 1966; Crandall, Katkovsky & Crandall, 1965). One such effort resulted in the development of the Intellectual Achievement Responsibility Questionnaire (IAR) which includes two subscales to assess children's perceptions of their responsibility for their intellectual (a) successes and (b) failures (Crandall et al., 1965). Subsequently, McGhee & Crandall (1968) demonstrated a significant relationship between scores on the IAR and academic achievement.

Using the IAR and related assessment techniques, a number of investigators have

found a positive relationship between internal locus of control and achievement test scores and/or grades among elementary school children (e.g., Bartel, 1971; Coleman et al., 1966; Gordon, 1977). This positive relationship has been demonstrated even when IQ and cognitive impulsivity are controlled (Messer, 1972), and in situations in which children are allowed to determine the level of difficulty at which they wish to work (Clifford & Cleary, 1972). On the other hand, the use of other measures of locus of control and achievement have resulted in a lack of support for this relationship in at least two investigations (Eisenman & Platt, 1968; Hjelle, 1970).

The present study was designed to develop our understanding in this area by analyzing children's attributional patterns regarding achievement-related behaviors and the implications of these patterns for subsequent learning endeavors. Weiner et al.'s (1971) model presumably allows a more subtle analysis of children's perceptions of and explanations for their performance, offering insight into the manner with which children confront new learning encounters. As Weiner (1972) has suggested, such an analysis might be particularly useful for understanding some of the circumstances surrounding children who are not succeeding in school. For example, one would predict that to the extent to which children attribute their performance to external and/or stable factors, they will perceive that they have little control over affecting or altering the outcomes of their future performance. Thus, the present study examined the causal attributions of average vs. low school achievers on school-related and school-unrelated tasks.

## Method

### Subjects

Approximately equal numbers of male and female 1st-2nd graders (n = 55) and 4th-5th graders (n = 113) completed the experimental task during class time. Children were primarily from White, working class, rural and semi-rural Vermont families.

Approximately 68% of the younger group and 37% of the older group had tested one year below their agemates on reading and/or math standardized achievement and diagnostic tests. These students comprised the "low achiever group" and were participants of the Title I program of the Elementary and Secondary Education Act of 1965. Children with emotional disturbances or physical handicaps were excluded from the sample.

Procedure

The classroom teacher drew the children's attention toward the issue of factors that affect people's performance. This discussion referred to and distinguished between meanings of luck, skill, effort and task difficulty. The precise introduction varied so as to be age-appropriate. Students were given two booklets of four drawings; each drawing depicted an elementary school aged child of the student's own sex completing a task. Within each of the booklets, the drawings were arranged in an identical order for all children. Half the children in each experimental condition completed the booklets in each of the two possible orders with approximately one week intervening between the completion of each booklet in order to reduce fatigue effects. The drawings varied from one another as a function of Outcome (success vs. failure) and Task (School - solving a problem the teacher assigned, Nonschool Neutral - completing a puzzle, Nonschool Feminine stereotyped - baking a cake, Nonschool Masculine stereotyped - building a go-cart). Below each drawing was a brief written description of the situation and outcome followed by four explanations for the outcome which referred to: (a) task difficulty, (b) effort, (c) luck, and (d) skill (in that order). The 1st-2nd graders proceeded through the booklets with E reading aloud and marking their responses while 4th-6th graders proceeded individually and at their own pace. Children were told to imagine that each drawing was really a picture of themselves and were asked to select the explanation which best suited their performance as depicted in that specific situation.

## Results

A separate 2x2x2x4x4 ANOVA of dichotomous data (Winer, 1971) was used to examine the responses of each age group (Sex of S x Achievement Status x Outcome x Task x Attribution, with repeated measures on the last three factors). Post hoc comparisons were examined with a Newman Keuls analysis at $p \leq .05$. A main effect for Attribution, $F(3,153) = 14.83$, $p < .001$ and $F(3,327) = 62.54$, $p < .001$ for the younger and older groups respectively, revealed that 'luck' was least frequently used as an explanation for performance at both ages. The younger children most frequently attributed performance to 'effort' and 'skill,' while the older children focused most often upon 'effort,' referring to a lesser degree to 'skill' and 'task difficulty' (see Table 1). Meanwhile, these attributions were found to vary systematically as a function of Achievement, Status, Outcome, and Task.

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Insert Table 1 about here

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Most strikingly, an Attribution x Status interaction appeared in both age groups; $F(3,153) = 3.24$, $p \leq .024$, $F(3,327) = 2.71$, $p \leq .046$ for the younger and older children respectively. Compared to the average achievers, the low achievers at both ages were more likely to explain their performance as a function of 'skill' and less likely to explain their performance as a function of 'effort' (see Table 1).

Outcome x Attribution interactions among both younger $F(3,153) = 13.27$, $p < .001$ and older groups, $F(3,327) = 43.58$, $p < .001$ revealed that 'effort' was used to explain successes more often than failures while 'task difficulty' (and among younger children 'skill') was used to explain failures more often than successes. This relationship was furthermore found to vary as a function of the Sex of child among the 4th-6th graders, $F(3,327) = 4.44$, $p < .005$. While males attributed their successes and

failures equally to 'skill,' females explained their failures more often than their successes as a function of 'skill.' Meanwhile, although males and females both used 'effort' to explain their successes more than their failures, this was significantly more the case for females than for males.

A Task x Attribution interaction appeared at both age levels, $F(9,459) = 2.01$, $p < .038$ and $F(9,981) = 1.21$, $p < .001$ respectively. Both age groups used 'effort' to explain performance on the school more than any of the nonschool tasks; 'skill' was seen as the determinant of nonschool more than school performance, particularly among the older group. Among the 4th-6th graders, this relationship was furthermore a function of task Outcome in that the predominant use of 'effort' to explain school vs. nonschool performance was considerably greater in success than in failure situations although the relationship persisted in the latter, Outcome x Task x Attribution, $F(9,981) = 2.944$, $p < .002$.

## Discussion

By the early elementary school years, children's explanations for performance seem to follow a systematic pattern which remains surprisingly consistent across age. Most developmental changes appear to involve an increased consideration of the context of the performance, as revealed by a greater number of interactive effects (involving the sex of the actor, the specific nature of the task, and the performance outcome). While younger children explained performance as a function of 'skill' more than older children, this may partially reflect a methodological issue. The younger children may have been somewhat more likely to select the last explanation which they were offered for each situation, which in this procedure was 'skill.'

In accord with findings of earlier studies with children, 'effort' was used to explain success more often than failure and 'task difficulty' was used to explain failure more often than success. Furthermore, the older children revealed sex differ-

ences in this attributional pattern which support the findings of earlier studies. In contrast to males, females were more likely to explain their failures than their successes by internal, stable causes (lack of 'skill'). Relative to males, females were more likely to use internal but unstable explanations for their successes ('effort').

Given the pencil and paper procedure employed in the present study, one must be cautious in generalizing the results to actual behavioral settings. Nevertheless, several of the findings which arose clearly have relevance to educational concerns. Children explained performance on the school vs. nonschool tasks in very different manners. 'Effort,' an unstable, internal factor was more frequently used to explain school than nonschool performance while 'skill,' a stable, internal factor, was more often used to explain nonschool than school performance. Thus, particularly with age, school performance may be perceived as revealing the degree of effort one exerts more than the level of one's skills (which to some degree may be realistic).

Perhaps more critically, this study indicated that as early as first-second grade, low achievers were more likely to explain performance by 'skill' (regardless of outcome) compared to average achievers, who were more likely to attribute their performance to 'effort.' These differences appear to have important implications for performance. To the degree to which performance is explained by a fixed or stable factor such as 'skill,' personal responsibility for altering future outcomes is reduced. Or, in other terms, this attributional pattern may reveal a certain feeling of "helplessness" with the self being seen as relatively incapable of effecting change on future performance. The greater emphasis on 'effort' by average achievers suggests a greater recognition of one's responsibility and/or ability to control or determine the outcomes of one's endeavors.

In light of the research which has related internal vs. external locus of control

to academic achievement, the present study has pointed to the stability dimension as critical in distinguishing low vs. average academic achievers (supporting McMahan, 1973). While the IAR is sometimes referred to as a measure of locus of control and at other times labelled as an assessment of perceived responsibility for academic achievement, there appears to be a finer distinction which needs to be made regarding the amount of control individuals feel they have over their performance. While all children perceived the causes for performance to be predominantly internal in nature, the low achievers appeared to say "I am responsible, but I have little power to change what happens." The demonstrated relationship between consistency of feedback and the stability dimension (Ames et al., 1976) suggests that the distinction between the low and average achievers may be related to the fact that the former have received more consistent feedback (i.e., failure) than the latter.

From a social psychological perspective, the differential emphases on 'effort' of the two achievement groups is congruous with Weiner et al.'s (1971) and Weiner and Peter's (1973) distinction that persons high in achievement needs perceive effort as controlling outcome whereas those low in achievement needs are not convinced of the efficacy of effort expenditure. From a developmental perspective, this finding elicits further speculation. Weiner and Peter (1973) found that four-six year olds did not see 'effort' as a dimension to be rewarded in achievement settings, but with development to 10 or 12 years of age there was an increased value placed on this dimension. While both the present study and Karabenick and Heller (1976) found five- and six-year-olds focusing considerably upon 'effort,' both also found an increase in this tendency with age. Thus one possibility, however speculative, is that the low achiever's relative deemphasis upon 'effort' vs. 'skill' reflects a type of developmental or cognitive lag.

One of the major questions raised by the previously demonstrated relationship between internal locus of control and academic achievement concerns the degree to which locus of control leads to, rather than results from, achievement level. While

both Crandall et al. (1965) and McGhee and Crandall (1968) argued that one's internal vs. external orientation is a motivational factor which leads to achievement performance, Kohn (1969) and Messer (1972) have argued that one's educational environment and/or achievement is the cause, rather than the effect of self-directed values or locus of control. The present study cannot resolve this matter; furthermore, the premises of the attributional model it employs clearly stress the interactive, cyclic nature of the relationship. However, the early age at which the relationship between attributional pattern and achievement was found and its stability across the elementary school years suggest that children may very well be entering school with such a perspective already established.

In our attempts to resolve this issue in a more systematic fashion, we must also question the extent to which children's attributional patterns reflect their teachers' and/or parents' perceptions and feedback. Bar-Tal and Darom (1979) refer to data which confirms that teachers often express their perceptions of the causes of their students' performance to their students who, in turn, adopt their teachers' perspectives. Furthermore, we must question the degree to which children being labelled for example, as a "Title I child" (as they were in this case) encourages these self-perceptions either directly or indirectly (through reactions of teachers, parents, and peers). Finally, considering the early emergence of this pattern, we might give more attention to those socialization factors which precede the school experience.

Given the striking difference between attributional patterns of average and poor achievers and its behavioral implications, it seems meaningful to consider training procedures aimed at redirecting low achievers' causal attributions (as Dweck et al., 1978, has demonstrated is feasible) as early as the preschool years. Regardless of the relative accuracy or inaccuracy of the children's attributions, the perceptions of the low achievers may be clearly disruptive to future attempts at learning.

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Table 1

Mean Attribution Ratings as a Function of Student Status

| Student Status | Attributions | | | |
|---|---|---|---|---|
| 1st and 2nd graders | Task Difficulty | Effort | Luck | Skill |
| Average Achievers | .233 | .382 | .072 | .312 |
| Low Achievers | .132 | .300 | .125 | .493 |
| $\bar{X}$ | .183 | .341 | .099 | .403 |
| 4th and 5th graders | | | | |
| Average Achievers | .239 | .482 | .057 | .223 |
| Low Achievers | .210 | .415 | .067 | .310 |
| $\bar{X}$ | .224 | .449 | .062 | .266 |